

May 24, 2019

¹Cp

²Tc

³Ss

⁴Cn

⁵Tr

⁶Gl

⁷Al

⁸Sc

Cardno - Newark, DE

Sample Delivery Group: L1098626

Samples Received: 05/13/2019

Project Number:

Description:

Report To: Art Saunders
121 Continental Drive Suite 308
Newark, DE 19713

Entire Report Reviewed By:



Craig Cothron
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



90016233



Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Tr: TRRP Summary	5	³ Ss
Gl: Glossary of Terms	6	⁴ Cn
Al: Accreditations & Locations	7	⁵ Tr
Sc: Sample Chain of Custody	8	⁶ Gl
		⁷ Al
		⁸ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



WW-20190511-002-DAY 9 L1098626-01 GW

Collected by
CP/RF

Collected date/time
05/11/19 11:30

Received date/time
05/13/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Subcontracted Analyses	WG1281433	1	05/24/19 00:00	05/24/19 00:00	CBM	Subcontract

- ¹Cp
- ²Tc
- ³Ss
- ⁴Cn
- ⁵Tr
- ⁶Gl
- ⁷Al
- ⁸Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Craig Cothron
Project Manager

Project Narrative

L1098626 -01 contains subout data that is included after the chain of custody.

¹ Cp

² Tc

³ Ss

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⁷ Al

⁸ Sc



This data package consists of this signature page, the laboratory review checklist, and the following reportable data as applicable:

- R1 - Field chain-of-custody documentation;
- R2 - Sample identification cross-reference;
- R3 - Test reports (analytical data sheets) for each environmental sample that includes:
 - a. Items consistent with NELAC Chapter 5,
 - b. dilution factors,
 - c. preparation methods,
 - d. cleanup methods, and
 - e. if required for the project, tentatively identified compounds (TICs).
- R4 - Surrogate recovery data including:
 - a. Calculated recovery (%R), and
 - b. The laboratory's surrogate QC limits.
- R5 - Test reports/summary forms for blank samples;
- R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
 - a. LCS spiking amounts,
 - b. Calculated %R for each analyte, and
 - c. The laboratory's LCS QC limits.
- R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a. Samples associated with the MS/MSD clearly identified,
 - b. MS/MSD spiking amounts,
 - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d. Calculated %Rs and relative percent differences (RPDs), and
 - e. The laboratory's MS/MSD QC limits
- R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
 - a. The amount of analyte measured in the duplicate,
 - b. The calculated RPD, and
 - c. The laboratory's QC limits for analytical duplicates.
- R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- R10 - Other problems or anomalies.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Craig Cothron
Project Manager



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

SDG	Sample Delivery Group.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Tr
⁶ Gl
⁷ Al
⁸ Sc

Qualifier	Description
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The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

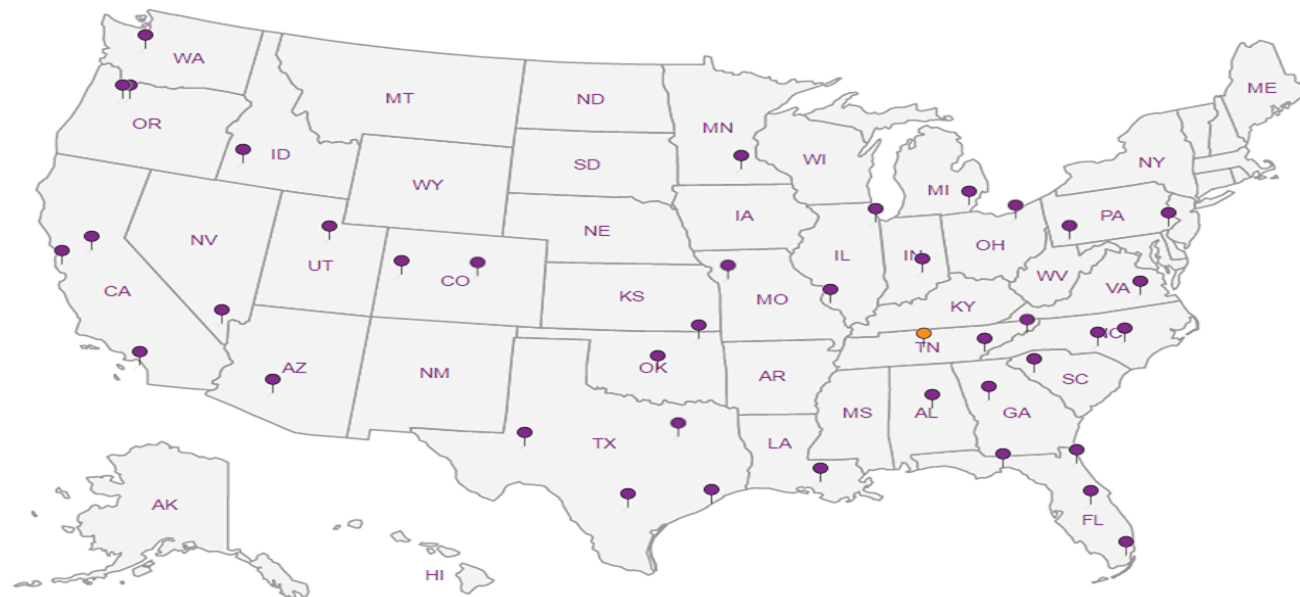
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.





Ana-Lab Corp.
P.O. Box 9000
Kilgore, TX 75663
903/984-0551

LELAP-accredited #02008

Report

Table of Contents

Printed 05/22/2019 Page 1 of 1

Pace Analytical/TN
12065 Lebanon Rd
Mt Juliet, TN 37122

Account

PAJL-A

Project

874618

This report consists of this Table of Contents and the following pages:

<u>Report Name</u>	<u>Description</u>	<u>Pages</u>
874618_r03_03_ProjectResults	Ana-Lab Project P:874618 C:PAJL Project Results t:304 PO: L1099017	2
874618_r10_05_ProjectQC	Ana-Lab Project P:874618 C:PAJL Project Quality Control Groups	1
874618_r99_09_CoC__1_of_1	Ana-Lab CoC PAJL 874618_1_of_1	2
Total Pages:		5



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662



NELAP-accredited #T104704201-19-15



Results

Printed: 05/22/2019 17:04

Page 1 of 2

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Report To

Pace Analytical/TN
12065 Lebanon Rd
Mt Juliet, TN 37122

Account

PAJL-A

Results

1784687 WW-20190511-002-DAY 9

Received: 05/17/2019

Non-Potable Water

Collected by: Client

Pace Analytical/TN

PO: L1099017

Taken: 05/13/2019 11:30:00

EPA 245.7 2

Prepared: 839346 05/22/2019 06:52:56 Analyzed 839521 05/22/2019 13:34:00 LPS

Parameter

Results

Units

RL

Flag

CAS

Bottle

N Mercury, Total (low level)

<4.26

ng/L

4.26

7439-97-6

02

Sample Preparation

1784687 WW-20190511-002-DAY 9

Received: 05/17/2019

L1099017

EPA 245.7 2

Prepared: 839346 05/22/2019 06:52:56 Analyzed 839346 05/22/2019 06:52:56 LPS

N Low Level Mercury Liquid Metals

50/47

ml

01





Results

Printed: 05/22/2019 17:04

Page 2 of 2

874618

Qualifiers:

We report results on an As Received or wet basis unless marked Dry Weight. Unless otherwise noted, testing was performed at Ana-labs corporate laboratory that holds the following Federal and State certificates: EPA Lab Number TX00063, US Department of Agriculture Soil Import Permit P330-17-00117, Texas Commission on Environmental Quality Commercial Drinking Water Lab Approval (Lab ID: TX219), Texas Commission on Environmental Quality NELAP T104704201-19-15, Louisiana Department of Environmental Quality Laboratory Certification (NELAP, LELAP) #02008, Louisiana Department of Health and Hospitals Drinking Water (NELAP) Certificate No LA026, Oklahoma Department of Environmental Quality TNI Laboratory Accreditation Program Certificate No. 2018-126, Arkansas Department of Environmental Quality Certification #18-068-0. The Accredited column designates accreditation by N -- NELAC, or z -- not covered under NELAC scope of accreditation.

These analytical results relate to the sample tested. This report may NOT be reproduced EXCEPT in FULL without written approval of Ana-Lab Corp. Unless otherwise specified, these test results meet the requirements of NELAC.

RL is the Reporting Limit (sample specific quantitation limit) and is at or above the Method Detection Limit (MDL). CAS is Chemical Abstract Service number. RL is our Reporting Limit, or Minimum Quantitation Level. The RL takes into account the Instrument Detection Limit (IDL), Method Detection Limit (MDL), and Practical Quantitation Limit (PQL), and any dilutions and/or concentrations performed during sample preparation (EQL). Our analytical result must be above this RL before we report a value in the 'Results' column of our report (without a 'J' flag). Otherwise, we report ND (Not Detected above RL), because the result is "<" (less than) the number in the RL column.

MAL is Minimum Analytical Level and is typically from regulatory agencies. Unless we report a result in the result column, or interferences prevent it, we work to have our RL at or below the MAL.

Bill Peery, MS, VP Technical Services





Quality Control

Printed 05/22/2019

Page 1 of 1

874618

Report To

Pace Analytical/TN
12065 Lebanon Rd
Mt Juliet, TN 37122

Account

PAJL-A

Analytical Set 839521

EPA 245.7 2

AWRL/MRL C

Parameter	Reading	Known	Units	Recover%	Limits%	File
Mercury, Total (low level)	4.34	5.00	ng/L	86.8	70.0 - 130	119954834

Blank

Parameter	PrepSet	Reading	MDL	MLQ	Units	File
Mercury, Total (low level)	839346	ND	1.65	4.00	ng/L	119954838

CCV

Parameter	Reading	Known	Units	Recover%	Limits%	File
Mercury, Total (low level)	10.0	10.0	ng/L	100	76.0 - 124	119954837
	10.4	10.0	ng/L	104	76.0 - 124	119954845
	10.3	10.0	ng/L	103	76.0 - 124	119954856
	10.2	10.0	ng/L	102	76.0 - 124	119954867

ICL

Parameter	Reading	Known	Units	Recover%	Limits%	File
Mercury, Total (low level)	103	100	ng/L	103	90.0 - 110	119954836

ICV

Parameter	Reading	Known	Units	Recover%	Limits%	File
Mercury, Total (low level)	9.81	10.0	ng/L	98.1	90.0 - 110	119954835

LCS Dup

Parameter	PrepSet	LCS	LCSD	Known	Limits%	LCS%	LCSD%	Units	RPD	Limit%
Mercury, Total (low level)	839346	25.9	26.4	25.0	76.0 - 113	104	106	ng/L	1.91	50.0

MSD

Parameter	Sample	MS	MSD	UNK	Known	Limits	MS%	MSD%	Units	RPD	Limit%
Mercury, Total (low level)	1784628	31.5	32.3	4.49	26.6	67.0 - 111	102	105	ng/L	2.92	18.0
	1784688	21.8	21.2	ND	26.6	67.0 - 111	82.0	79.7	ng/L	2.79	18.0


* Out RPD is Relative Percent Difference: $\text{abs}(r1-r2) / \text{mean}(r1,r2) * 100\%$ Recover% is Recovery Percent: $\text{result} / \text{known} * 100\%$

Blank - Method Blank; CCV - Continuing Calibration Verification; ICV - Initial Calibration Verification; AWRL/MRL C - Ambient Water Reporting Limit/Minimum Reporting Limit Check Std



1 of 2

874618 CoC Print Group 001 of 001

Sub-Contract Chain of Custody					
Batch Date/Time: 05/15/19 11:10		WFO: WG1281433		 12065 Lebanon Rd. Mt. Juliet, TN 37122 call: (615) 773-9756	
Sub-Contract Lab: ANALABKTX		Results Due Date: 05/28/19			
Address: 2690 Dudley Rd		ESC Purchase Order #: L1098626			
City/State: Kilgore, TX 75662-3730		Send Reports to: Benita Miller			
Contact: rayna.chitwood@ana-lab.com		Email: SuboutTeam@esclabsolutions.com			
Sample ID Container ID	Matrix	State	Collect Date	Description	Sample Number : Sample Comments
WW-20190511-002-DAY9 28214068	GW	DE	05/11/19 11:30	Mercury 245.7 QC 3	L L1098626-01 Mercury 245.7 QC 3
* = Container used for multiple Samples and/or Analyses					
Relinquished by: <u>Bm</u>		Date: <u>05/16/19</u>			
Received by: <u>LSO</u>		Date: _____			
Relinquished by: <u>LSO</u>		Date: <u>5/17/19 0830</u>		1784687	
Received by: <u>Kathy Tarver</u>		Date: <u>5/17/19 0830</u>			
Kathy Tarver ANALAB					

See Attached for
Tracking # and Temp

874618 CoC Print Group 001 of 001



ORIGIN ID:BNAA (615) 758-5858
SHIPPING
PACE ANALYTICAL NATIONAL
12085 LEBANON PIKE
MOUNT JULIET, TN 37122
UNITED STATES US

SHIP DATE: 18MAY18
ACTWGT: 26.75 LB
CAD: 0361800/CAFE3211

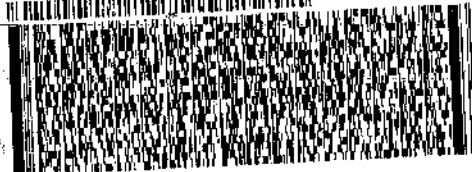
BILL SENDER

UNITED STATES US
TO MS. TAYNA CHITWOOD
ANA LAB
2600 DUDLEY RD

KILGORE TX 756623730
REF: ANALABK1X

(615) 768-5866
PO: ANALABKITX

REF: ANALABKIX



FedEx
Express

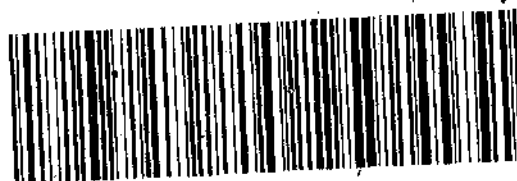


FRI - 17 MAY 3:00P
STANDARD OVERNIGHT

IRK# 4882 8631 8397
0201

XX GGGA

75662
TX-US SHV



Thermid	Corr Fact	Temp(°C)
---------	-----------	----------

6205

6443

6444

6093

Date _____

Time

Tech

Date 5/17 Time 1100 Tech He